

South Dakota State University

# Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange

---

SDSU Extension Fact Sheets

SDSU Extension

---

1972

## Coyotes and Their Control

Cooperative Extension South Dakota State University

Follow this and additional works at: [https://openprairie.sdstate.edu/extension\\_fact](https://openprairie.sdstate.edu/extension_fact)

---

### Recommended Citation

South Dakota State University, Cooperative Extension, "Coyotes and Their Control" (1972). *SDSU Extension Fact Sheets*. 619.

[https://openprairie.sdstate.edu/extension\\_fact/619](https://openprairie.sdstate.edu/extension_fact/619)

This Fact Sheet is brought to you for free and open access by the SDSU Extension at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in SDSU Extension Fact Sheets by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact [michael.biondo@sdstate.edu](mailto:michael.biondo@sdstate.edu).

# Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



For current policies and practices, contact SDSU Extension

Website: [extension.sdstate.edu](http://extension.sdstate.edu)

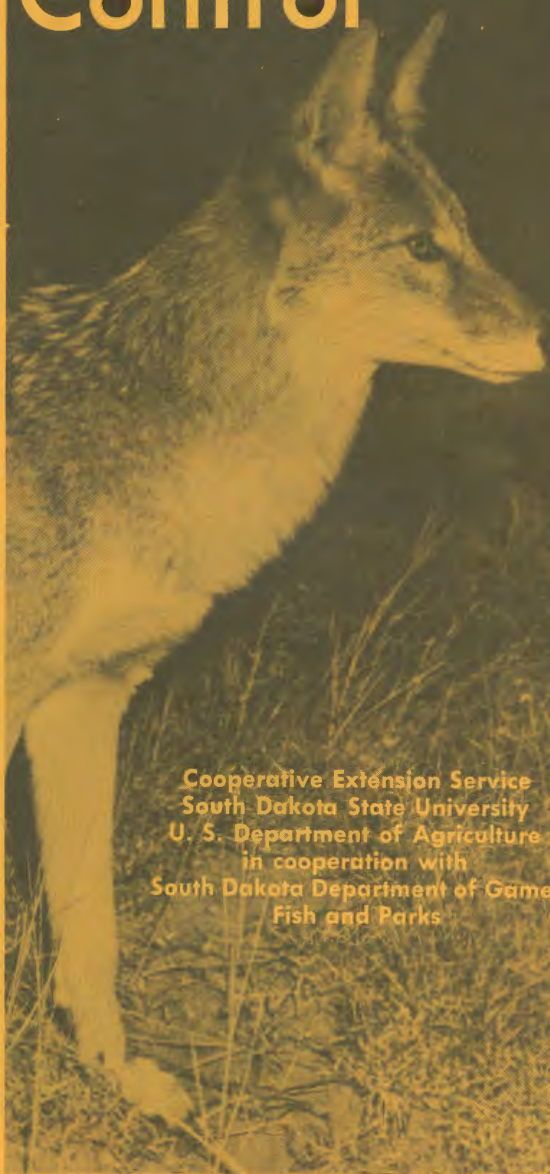
Phone: 605-688-4792

Email: [sdsu.extension@sdstate.edu](mailto:sdsu.extension@sdstate.edu)

SDSU Extension is an equal opportunity provider and employer in accordance with the nondiscrimination policies of South Dakota State University, the South Dakota Board of Regents and the United States Department of Agriculture.

# Coyotes and Their Control

FS 564



Cooperative Extension Service  
South Dakota State University  
U. S. Department of Agriculture  
in cooperation with  
South Dakota Department of Game,  
Fish and Parks



# Coyotes and Their Control

by John L. Schmidt, Extension wildlife specialist

The coyote is the official state mammal in South Dakota and the official mascot at the University of South Dakota. Despite their apparently prestigious position in the state, coyotes have been the target of an intensive control effort for many years. This campaign was initiated because of coyote depredation on poultry and livestock. Overall, however, the coyote's food habits benefit man because a large majority of its diet consists of nuisance animals and carrion.

This publication describes the coyote, its ecology and economic importance, and offers tips on trapping and controlling coyotes.

## Description

Coyotes are dog-like in appearance. An adult coyote closely resembles a small German Shepherd in general form and is easily distinguished from other members of the wild canine family. Foxes are much smaller and the larger wolf is extinct in South Dakota.

Coyote pups can be distinguished from fox pups by examining their eyes. Coyote pups have round pupils whereas those of foxes are vertically elliptical.

Coyotes run with their tails between their legs. Foxes, by contrast, tend to hold their tails out straight.

Coyote fur is long and coarse and varies in color from nearly black to almost white. Typically, their coat is light grey on the top and sides; the underparts are lighter with a little yellow, black and red mixed in. This gives them a rather grizzled appearance.

Both sexes are similar in appearance with females being slightly smaller. An average coyote weighs 18 to 30 pounds, although large males weighing up to 48 pounds have been recorded. They are  $3\frac{1}{2}$  to  $4\frac{1}{2}$  feet long from the tip of the nose to the tip of the tail.

The howl of the coyote is a distinguishing characteristic and a familiar sound to many South Dakotans. Its call begins with a series of sharp barks or yaps which increase in volume and end in a long wail. It is most common during the mating season in February and March. Coyotes howl either in chorus or solo. Coyotes also make a purr-like whine when playing with or feeding their pups.

The coyote's track is similar to a dog's, although more elongate and not so rounded as that of a dog (see Figure 1).

Coyotes began to increase in South Dakota following the extermination of the grey wolf (the last

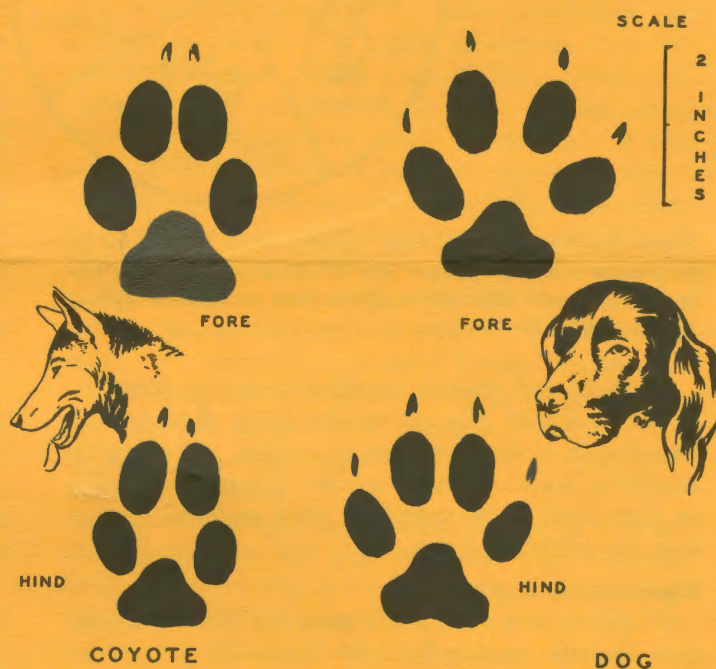


Figure 1. Fore and hind foot track of coyote and dog. The coyote track is more elongate and not as rounded as that of the dog.

native wolf was killed in Harding County in 1926). The elimination of the wolf made life easier for coyotes, which then increased and extended their range over the entire state. Since that time, coyotes have been eliminated from some local areas due primarily to intensive use of poisons and intensive land use. The range of the coyote includes most of North America except the southeastern United States.

## Ecology

### Food Habits

Food habits of the coyote have been intensively studied by examining stomach contents. Coyotes are true carnivores; about 98% of their diet consists of animal matter and only 2% of vegetable matter. Approximately  $1/5$  of their diet is composed of items that man wants for himself such as livestock (primarily sheep and goats), deer, and birds. However, it should be noted that some of these food items include sick or weak animals and animals that were killed by other causes.



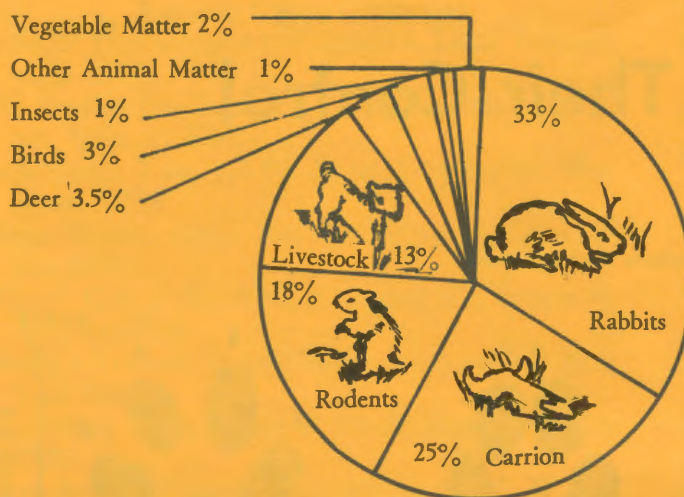


Figure 2.—Annual food of the coyote. Data was obtained by examining stomach contents of 8,339 coyotes from South Dakota and several other states. Collections were made during each month of the year.

Rabbits and rodents together make up about  $\frac{1}{2}$  of the total diet. The coyote also helps clean up the countryside of deadcarcasses or carrion, and this constitutes an additional  $\frac{1}{4}$  of its diet. The remaining 5% of their food is composed of plant material, insects and miscellaneous items.

#### Reproduction and Mortality

Coyotes, as a rule, don't mate for life but a pair may remain together for a few years. They breed in February or March and, after a 9-week gestation, produce an average of 5 young in April or May. Litter size ranges from 4-10.

The pups emerge from the den at about 3 weeks. Both parents help care for the young and bring food or regurgitate partially digested food for the pups. At 8-12 weeks of age, the pups are weaned at which time they abandon the den and begin roaming with their parents. By late summer or fall, they're on their own and may disperse up to 120 miles in search of homesites.

Coyotes occasionally breed with domestic dogs, especially in areas where coyote are scarce. The offspring produced are fertile.

The cougar and wolf are important predators of coyotes. However, since both the cougar and wolf are extinct in South Dakota, coyotes have but one important predator—man. Through intensive poisoning, trapping, and hunting, man has controlled coyotes to the point of annihilation in some areas. Coyotes, like dogs, are subject to several parasites including mites, ticks, lice, fleas, roundworms, flukes, tapeworms, and protozoans. Their most frequent diseases are distemper, rabies, and tularemia. Young coyotes are occasionally preyed upon by dogs, great horned owls, and perhaps other carnivores. Deer have been known to kill adult coyotes with their sharp hooves.

Coyotes in the wild may live 6 to 10 years. The oldest coyote on record, a captive animal, lived to the ripe old age of 22 years.

#### Habits

Coyotes are generally found in the open prairie, in brushy country, or near the edge of timbered areas. They normally live in dens while raising young, but will sleep on the ground in protective cover during the rest of the year. Dens are found in steep banks, under tree stumps, in rock crevices, in deserted buildings, as well as on flat ground. One coyote even established her den in a hollow tree some 5 feet above the ground. Usually the coyote enlarges and remodels existing dens made by badgers, fox or skunks, but sometimes will start from scratch and dig a completely new den. The opening of the den is about a foot in diameter and the nest area is about 3 feet in diameter. Occasionally dens have 2 or 3 openings.

Coyotes are chiefly nocturnal, but occasionally venture out during the daylight hours. They may hunt alone or in pairs and will use teamwork in capturing their prey. They seldom hunt in groups as do wolves. However, a coyote family will hunt together during the summer until the young disperse. In the winter, coyotes remain active and do not hibernate.

Coyotes will follow an established hunting route each night in search of food. This route or runway may cover 10 miles. Coyotes may use the same route their entire life, if there is an adequate food supply and little disturbance from man or other animals.

Coyotes sometimes bury their "left-overs" from a night's hunt and return to their cache for another meal.

Coyotes possess no outstanding physical abilities. They can swim; their abilities to see, hear, and smell are good although their sense of taste is not well developed; their speed seldom exceeds 30 m.p.h. However, coyotes are quite versatile in their living requirements and have adapted well to encroachment by white man.

Coyotes are rather sociable upon occasion and have been known to gather in groups to howl and play. Their play consists of good-natured rough and tumble wrestling. Both the young and old will join in the fun.

#### Economic Importance

Like most wild carnivores in South Dakota, the coyote has both good and bad qualities from a human standpoint. Their depredations upon livestock are probably their most notorious trait. A 1970 survey by the South Dakota Crop and Livestock Reporting Service estimated livestock losses due to coyotes at \$221,000. However, it should be noted that this constituted less than 1% of all livestock losses. The great majority (99%) of livestock losses are caused by disease, accidents, weather, birth complications and



other miscellaneous factors. Sheepmen suffered the heaviest coyote damage, as coyotes accounted for 5% of all sheep losses and 7% of all lamb losses. Loss of calves, poultry and other livestock due to coyotes was less than 1/10 of one percent. Most livestock losses due to coyotes are caused by a small minority of renegade individuals or families that have "gone bad." Some livestock kills that are blamed on the coyote are probably caused by domestic dogs.

Cantaloupe and melon patches are occasionally raided by coyotes, which can be important on a local basis.

Big game losses to coyotes are insignificant in most cases. Coyotes have a difficult time in bringing down a healthy deer or antelope. The author witnessed a doe mule deer attack, and drive off, 2 adult coyotes that came too close to her fawn. Antelope, even young ones, can easily outdistance a coyote. However, a sick, wounded or otherwise weakened deer or antelope may become part of the coyote's menu, as can extremely young animals.

About 80% of the coyote's diet is comprised of items that man prefers to have controlled or reduced. Rabbits and rodents that eat crops and gardens and destroy shelterbelts make up 1/2 of the coyote's total food consumption. Carcasses of animals killed from other causes constitute 1/4 of the coyote's diet. Insects, skunks, and other pests to man are also on the coyote's menu.

The value of coyote fur varies with women's fashions and is just as unpredictable. In the past, prices have varied from \$0.75 to \$25.00. In recent years, the price has been fairly stationary, at about \$5-8.

Since 1945, a bounty of \$5.00 has been paid for adult coyotes and \$2.00 on coyote pups in South Dakota. In that span of years, over \$500,000 has been paid for coyote bounty. Although of some economic value, the bounty is ineffective in controlling coyote damage.

Sport hunting of coyotes is certainly of recreational value to many South Dakotans, although the exact economic value has not been determined. Coyotes are hunted with dogs, from aircraft, and with a predator call by many avid hunters.

The value of coyotes as human food is thought to be negligible although one author has said that "coyote meat is comparable in taste to the meat of the grey wolf, although coyote meat is more tender." So, if you like wolf meat, you'll just love eating coyote.

The fat of coyotes was used by pioneers for grease and lard.

Young coyotes were taken as pets by the American Indians who also used them for hauling light loads. Wild coyotes are still taken as pets and sometimes domesticate fairly well if captured as young pups. On reaching maturity, however, some pet coy-

otes have become quite destructive in and out of the house. Furthermore, many partly-tamed coyotes have escaped and caused serious poultry and livestock losses.

### Control

Control measures should be aimed at controlling damage caused by coyotes instead of simply reducing the population. This usually involves killing a particular problem individual or pair of coyotes rather than exterminating the entire population. Experience has shown that killing all coyotes in an area may lead to other problems arising from overpopulation of rabbits and rodents. In some western states, coyote extermination by sheep growers caused such an increase in jackrabbits that the range was denuded of vegetation by the rabbits leaving little for the sheep to eat. Fewer sheep were produced then than prior to coyote extermination.

Furthermore, experience has also shown that elimination of one carnivore will lead to increases of others. For example, in areas of South Dakota when coyotes have been eliminated, sharp increases in foxes, raccoons and skunks have occurred. Because of this, South Dakota lamb losses to foxes nearly equal losses caused by coyotes.

It is not always easy to tell if coyotes or dogs are causing damage, but here are some clues that may help: (1) Generally, the coyote cuts or neatly punctures an animal's throat, leaving few marks. (2) The coyote may kill small lambs by biting through the head. (3) Feeding is usually limited to the heart and liver or intestinal fat which is removed by cutting through the animal's side just below the ribs. (4) Coyotes never eat the paunch or rumen.

Dogs, however, may attack an animal at any point of the body, especially from the rear, and their kills usually can be recognized by the slashed appearance of their wounds. Dogs are likely to kill more animals at a time, as they normally kill only for sport rather than need. Dog tracks are similar to coyote's although more rounded and less elongated than a coyote's. Fox tracks are similar to a coyote's but smaller.

### Hunting

The sport hunting of coyotes is undoubtedly the most enjoyable form of coyote control. Hunting can be done in several ways including calling coyotes, hunting with dogs, hunting from aircraft, and den hunting.

Calling coyotes as a sport is rapidly gaining popularity in South Dakota. A call which imitates the sound of a wounded cottontail or jackrabbit is used to lure the coyote into gun range. The only equipment necessary is the call which can be purchased locally at sporting goods or hardware stores and a gun. In open country, a rifle is preferred, but in brushy or timbered areas a shotgun may be a better choice.





Spread the setting cloth to one side of the trap location with one edge next to where the traps are to be placed. Kneel on the setting cloth and, with the digging tool, loosen dirt to form a flat-bottomed trench about 1½ inches deep and wide and long enough to accommodate the trap when set. Pile removed soil on setting cloth.



At one end of the trench drive the top of the stake to within an inch of the bottom. This will allow the chain to swivel freely after the coyote has been trapped.

Pick a spot with a good view of the surrounding countryside and camouflage yourself. Don't sit right on the top of a hill unless your silhouette is broken by a bush or tree. Remain at the stand for 15-20 minutes. If not successful, move at least a mile away and try again. Be prepared. Your calling may attract bobcats, weasels, badgers, dogs, deer, hawks, eagles and others, besides coyotes. Incidentally, calling is also a good method to attract animals into range for photographic purposes.

Trail hounds are very effective in killing problem coyotes. The dogs can follow the trail of the coyote from a fresh livestock kill. Sight hounds are built for speed and ride along with the hunter until a coyote is spotted. They are then released and, after a short chase, kill the coyote.

Den hunting should be done in May and June. Once the den is located, the pups can either be dug out or evicted with smoke or other irritants.

### Trapping

Trapping is an effective way to kill problem coyotes. The recommended steel trap size is a No. 3-N. This is a double, long spring trap, with an offset of about ⅛ inch between smooth (not toothed) jaws. Offset jaws reduce the chance of broken bones and thus the chance for a coyote to twist free. Furthermore, non-target animals can usually be set free without permanent injury.



Set the trap and turn both springs toward the trigger side at about a 45 degree angle. This allows the free jaw to lie flat. Put the cloth pan cover over the pan, with the long measurement of the cloth pulled under the jaws on each side. A slit cut in one end allows room for the trigger. Be sure the trigger mechanism is entirely free of the cloth.



Besides traps you'll need: 1) a **digging tool** such as a hatchet or garden trowel, 2) a **setting-cloth**, a 3-foot square piece of canvas or sheep or cow hide, 3) **pan covers**, several 5"x7" pieces of canvas or sack-ing, 4) **stakes**, 5) **scent**, and 6) a **sifter** made of  $\frac{1}{4}$  inch mesh hardware cloth. All of these items can usually be made or purchased locally with the exception of the scent. Scent can be ordered from one of several trapping supply companies listed on the back, or you can make your own. Coyote urine is a good natural scent and may be obtained from the bladder of dead coyotes or from captive animals. This urine can be improved by adding 4 tablespoons of glycerine per pint. The gall bladder and anal glands from a coyote carcass may also be added.

A fetid fish lure is also good for attracting coyotes. This can be made by grinding up eel, carp, buffalo or other oily fish and allowing it to age for 1 to 4 weeks. The ground fish should be placed in a container having a small vent and covered with screen or cheese cloth to allow gas to escape and prevent flies from entering. Beaver meat and beaver castor are good additions to this scent. Add 1 to 2 tablespoons glycerine per pint and mix thoroughly to give it body and prevent its evaporation.

If gloves are worn, they should be used only for trapping. Spitting, smoking and otherwise leaving human signs should be avoided.



Now cover the entire set with fine earth using the sifter. No more than  $\frac{1}{8}$  to  $\frac{1}{4}$  inch of dirt should be placed on the trap pan. If dirt taken from the trench is too moist or coarse for filling in, carry it away on the setting cloth and get the right kind of dirt some distance from the trap set. Smooth the fine dirt with a small twig "broom" and blend with the surrounding earth. The covered set should be flush with the adjacent ground. Sprinkle some dried vegetation over the finished set to make it look as nearly as possible like the surrounding area.



Using the dirt taken out of the trench, fill in around the traps, covering the springs, chain, and stake. Be sure to pack the dirt firmly so the trap will not tilt under the animal's foot. Dirt should be as firm as adjacent soil. Be careful that no dirt is allowed under the pan.



Sprinkle 10 to 20 drops of scent on "scent post" within a foot of the trap. Scent post can be a dried cow chip, piece of wood or a fence post. (Note the small stick pushed into the ground next to the trigger of the trap. This will help prevent the coyote from stepping on the trigger rather than the pan of the trap.)





To make the set even more attractive to coyotes, form a shallow hole using the handle of your digging tool. Place some cotton or wool in the hole and add some of the fish lure mentioned earlier. Cover the hole with dried vegetation.



As a finishing touch, leave a few scratch marks with a hand garden cultivator or similar tool to simulate marks left by canines after they urinate.

Locate the traps near the area where livestock losses have occurred or close to the coyote's hunting route. Tracks of coyotes can be found at crossings between fields, as well as along fences. Setting traps in open areas rather than along timbered creek bottoms where other furbearers range helps avoid having traps continually sprung by animals other than coyotes. Good sets can be made near old livestock carcasses and diggings of badgers and other carnivores. In fact, many successful coyote trappers dig simulated predator holes or food caches and set a trap near the opening. If carcasses are used, traps should be set well back, 5-10 yards, from the carcass to avoid catching birds that feed on the carcass.

Check to see that nothing unusual that might frighten a coyote has been left, and leave the scented set to do its work.

Don't be afraid to use the same location after it has been successful. Resets in the same location will be more attractive due to the natural scent left by the coyote while in the trap.

It is a good idea to place more than one set in a general location as coyotes often travel in pairs, and, during the summer, in family groups. Using only one trap thus limits your effectiveness.

Traps should be checked daily. Check traps from a distance to avoid leaving additional human odor. Rescenting of the scent posts need be done only every four or five days unless rain has fallen.



Carry away the unused dirt on the setting cloth and scatter it 20 to 30 yards distant. Rough up the vegetation where the setting cloth lay, so that the finished set appears as an undisturbed naturally bare place.



### Precautions in Trapping

1. Notify all landowners in the area of the location of traps and ask their cooperation in keeping their pets and children away from the traps.
2. Never set traps in pastures containing sheep, goats, calves or hogs.
3. Check traps daily to insure that accidental catches of pets and protected fur-bearers can be released as soon as possible.
4. Attach a tag to or stamp your traps with your name and address.

### Bounty

The bounty is an ineffective method of controlling coyote damage. Results from South Dakota and many other states show that bounties simply do not do the job they were designed to do. As a result, the trend is away from the bounty to more effective control methods.

Problems associated with the bounty include:

- 1) Bounties are not selective for problem coyotes. They are paid on all coyotes whether they are livestock killers or not.
- 2) Bounties are paid for many coyotes that would be killed regardless of a bounty payment. Many citizens hunt and trap coyotes for enjoyment, fur value, or livestock protection and would do so whether a bounty existed or not.
- 3) Bounties encourage fraudulent payments. Many instances are known where predators have been killed in one area not paying bounties, and taken to another state or county for bounty payment.
- 4) Bounties produce a warped sense of wildlife values. Payments are made to kill animals that, for the most part, are beneficial to the rural land owners and provide many hours of enjoyable recreation.

### Damage Prevention Methods

Coyote-proof fences are not a practical answer to coyote damage control over large areas. However, such fences may be the answer for protection of livestock in small pastures. A recommended coyote-proof fence plan is shown in Figure 3. An electric fence placed outside a livestock enclosure may also reduce coyote depredation.

Other preventive techniques include flares, lanterns, radios and exploding devices. For maximum efficiency, these devices should be moved every few days.

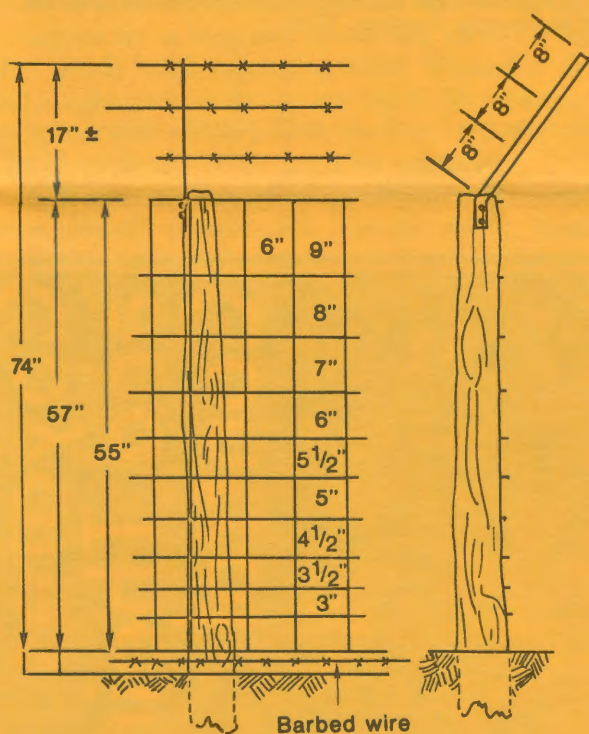
### Poisons

Because of their high safety risk to both humans and other non-target animals, the use of poisons is illegal and is not recommended.

### Assistance

The U. S. Fish and Wildlife Service, Division of Wildlife Services employs trappers west of the Missouri River in South Dakota. These trappers can be contacted locally, either directly or through the County Extension Office or by contacting their district office, Division of Wildlife Services, Post Office Box 250, Pierre, South Dakota 57501.

East of the Missouri River the South Dakota Department of Game, Fish and Parks employs several "Extension Trappers." Their main duty is to teach groups and individuals the art of trapping. They can be contacted locally through the County Extension Office, Conservation Officer, or through the South Dakota Department of Game, Fish and Parks regional offices in Mobridge, Chamberlain, Watertown and Sioux Falls.



### Barbed Wire Overhang

3 Horizontal barbed wires spaced 8" apart in 2' bracket.  
12½ Gauge wire with 14 Gauge 4-point barbs spaced 4" apart.

### Vertical Woven Wire

11 Horizontal wires spaced 3 to 9" apart.  
55" High  
6" Between stay (vertical) wires  
9 Gauge top and bottom wires  
11 Gauge mesh  
Hinge joints

Figure 3. A recommended coyote-proof fence plan.



#### Trapping Supply Companies

Animal Trap Company of America, Lititz, Pennsylvania 17543  
Bill Prouhet Fur Company, 13032 Gist Road, Bridgeton, Missouri 63042  
Bob-N-Jack Trap, 110 8th Street, Farmington, Minnesota 55024  
Boyer-Winona Corp., Box 278, Winona Lake, Indiana 46590  
"Circe" Call of the Wild, P. O. Box 697, Goodyear, Arizona 85338  
Dailey's Trapper Supply House, Ogdensburg, New York 13669  
Goodwins Traps, Route 4, Ownesboro, Kentucky 42301  
Greg Smith's Tomahawk Live Trap Co., P. O. Box 323, Tomahawk, Wis. 54487  
Hancock Trap Co., C. L. Hancock, Hot Springs, South Dakota 57747  
H. J. Spencer & Sons, P. O. Box 131, Gainesville, Florida 32601

Johnson's, Box 33, Waverly, Kentucky 42462  
Lippert's Trappers Supplies, Lippert Street, Curwensville, Pa. 16833  
McGill Metal Products Co., Marengo, Illinois 60152  
National Live Trap Corp., Rt. 1, Box 302, Tomahawk, Wisconsin 54487  
Northwest Trapper's Supply, P. O. Box 408, Owatonna, Minnesota 55060  
Northwoods, Box 25, Thief River Falls, Minnesota 56701  
O. L. Butcher's Trapping Supplies, Shushan, New York 12873  
S. Stanley Hawbaker & Sons, Fort Loudon, Pennsylvania 17224  
Pickard Trapping Supplies, Cobleskill, New York 12043  
Tingleys Northland, Coudersport, Pennsylvania 16915  
Verleen Trapper's Catalog, Rt. 1, Nashville, Kansas 67112

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture.  
Duane C. Acker, Director of Extension, South Dakota State University, Brookings, 57006  
4M—File: 9.3—4149

Cover Photo: Courtesy of Bureau of Sport Fisheries and Wildlife, Washington, D. C.



# Coyotes and Their Control

FS 564

Cooperative Extension Service  
South Dakota State University  
U.S. Department of Agriculture  
in cooperation with  
South Dakota Department of Game,  
Fish and Parks